CLAIMS

What is claimed is:

1. A heavy duty power transmission V-belt comprising:

at least one endless tension member a top surface of which on the back face side of the belt is provided with a plurality of upper receiving/inserting parts aligned lengthwise of the belt and a bottom surface of which on the bottom face side of the belt is provided with a plurality of lower receiving/inserting parts aligned lengthwise of the belt in correspondence with the plurality of upper receiving/inserting parts; and

a plurality of blocks each of which has at least one fitting part into which one said tension member is fitted by press insertion and contact parts respectively provided in side surfaces thereof in the widthwise direction of the belt and contactable with side faces of a pulley groove, said at least one fitting part being formed at the upper face with an upper inserting/receiving part mating with the upper receiving/inserting part of the tension member and being formed at the lower face with a lower inserting/receiving part mating with the lower receiving/inserting part of the tension member,

wherein through the fitting of the tension member into the fitting part of each of the blocks, the plurality of blocks are securely engaged to the tension member so that both the contact part of the side surface of each of the blocks in the widthwise direction of the belt and the side surface of the tension member are brought into contact with the side face of the pulley groove, whereby mating engagement between the inserting/receiving parts of the blocks and the receiving/inserting parts of the tension member allow power transmission,

wherein each of the blocks is formed of a resin part constituting at least the contact part and the fitting part, and a reinforcement at least partly embedded in the resin part and made of a material having a higher modulus of elasticity than the resin part,

wherein the back of the fitting part of each of the blocks in the direction of

insertion of the tension member is formed with an innermost abutment surface against which an abutment part of the tension member located at a leading end thereof in the direction of insertion of the tension member abuts, and

wherein the fitting part is formed with an indent by upwardly recessing a portion of the resin part located between the upper inserting/receiving part and the innermost abutment surface.

2. The heavy duty power transmission V-belt of Claim 1, wherein the indent and the upper end of the innermost abutment surface are connected together by a curved surface to merge smoothly into each other.

3. The heavy duty power transmission V-belt of Claim 1, wherein the indent has substantially an arcuate shape.

4. The heavy duty power transmission V-belt of Claim 1, wherein edges between the indent and both the front and rear surfaces of each of the blocks in the lengthwise direction of the belt are chamfered in an arcuate cross-section.

5. The heavy duty power transmission V-belt of Claim 1, wherein the uppermost end of the indent is located at the same level with or above the upper end of the upper inserting/receiving part of the fitting part.

6. The heavy duty power transmission V-belt of Claim 1, wherein an edge between the upper receiving/inserting part and the abutment part of the tension member is located in the indent.

7. A heavy duty power transmission V-belt comprising:

at least one endless tension member a top surface of which on the back face side of the belt is provided with a plurality of upper receiving/inserting parts aligned lengthwise of the belt and a bottom surface of which on the bottom face side of the belt is provided with a plurality of lower receiving/inserting parts aligned lengthwise of the belt in correspondence with the plurality of upper receiving/inserting parts; and

a plurality of blocks each of which has at least one fitting part into which one said tension member is fitted by press insertion and contact parts respectively provided in side surfaces thereof in the widthwise direction of the belt and contactable with side faces of a pulley groove, said at least one fitting part being formed at the upper face with an upper inserting/receiving part mating with the upper receiving/inserting part of the tension member and being formed at the lower face with a lower inserting/receiving part mating with the lower receiving/inserting part of the tension member,

wherein through the fitting of the tension member into the fitting part of each of the blocks, the plurality of blocks are securely engaged to the tension member so that both the contact part of the side surface of each of the blocks in the widthwise direction of the belt and the side surface of the tension member are brought into contact with the side face of the pulley groove, whereby mating engagement between the inserting/receiving parts of the blocks and the receiving/inserting parts of the tension member allow power transmission,

wherein each of the blocks is formed of a resin part constituting at least the contact part and the fitting part, and a reinforcement at least partly embedded in the resin part and made of a material having a higher modulus of elasticity than the resin part,

wherein the back of the fitting part of each of the blocks in the direction of insertion of the tension member is formed with an innermost abutment surface against which an abutment part of the tension member located at a leading end thereof in the direction of insertion of the tension member abuts,

wherein the fitting part is formed with an indent by upwardly recessing a portion

of the resin part located between the upper inserting/receiving part and the innermost abutment surface, and

wherein the relationship $\theta 2-3<\theta 1<\theta 2+3$ is established between an innermost abutment surface angle $\theta 1$ (unit: °) made by a portion of the innermost abutment surface located between corresponding positions thereof to the lower end of the upper inserting/receiving part of the fitting part and the upper end of the lower inserting/receiving part of the fitting part and a vertical plane along the length of the belt and a belt side face angle $\theta 2$ (unit: °) made by the contact parts of the right and left side surfaces of each of the blocks and the vertical plane.

8. The heavy duty power transmission V-belt of Claim 1,

wherein the reinforcement of each of the blocks is formed of upper and lower beams located above and below the fitting part, respectively, and a pillar connecting between the root ends of both the upper and lower beams, and

wherein a beam angle made by the longitudinal center line of the upper beam and the side face of the pulley groove located closer to the center of the pulley than the contact position of the contact part of each said block located above the fitting part is set at 90° or more.

9. The heavy duty power transmission V-belt of Claim 1,

wherein the reinforcement of each of the blocks is formed of upper and lower beams located above and below the fitting part, respectively, and a pillar connecting between the root ends of both the upper and lower beams, and

wherein a beam angle made by the longitudinal center line of a root end side portion of the upper beam and the side face of the pulley groove located closer to the center of the pulley than the contact position of the contact part of each said block located above the fitting part is set at 90° or more, while a beam angle made by the longitudinal

center line of a distal end side portion of the upper beam and the side face of the pulley groove located closer to the center of the pulley than the contact position of the contact part of each said block located above the fitting part is set at less than 90°.

10. A heavy duty power transmission V-belt comprising:

at least one endless tension member a top surface of which on the back face side of the belt is provided with a plurality of upper receiving/inserting parts aligned lengthwise of the belt and a bottom surface of which on the bottom face side of the belt is provided with a plurality of lower receiving/inserting parts aligned lengthwise of the belt in correspondence with the plurality of upper receiving/inserting parts; and

a plurality of blocks each of which has at least one fitting part into which one said tension member is fitted by press insertion and contact parts respectively provided in side surfaces thereof in the widthwise direction of the belt and contactable with side faces of a pulley groove, said at least one fitting part being formed at the upper face with an upper inserting/receiving part mating with the upper receiving/inserting part of the tension member and being formed at the lower face with a lower inserting/receiving part mating with the lower receiving/inserting part of the tension member,

wherein through the fitting of the tension member into the fitting part of each of the blocks, the plurality of blocks are securely engaged to the tension member so that both the contact part of the side surface of each of the blocks in the widthwise direction of the belt and the side surface of the tension member are brought into contact with the side face of the pulley groove, whereby mating engagement between the inserting/receiving parts of the blocks and the receiving/inserting parts of the tension member allow power transmission,

wherein each of the blocks is formed of a resin part constituting at least the contact part and the fitting part, and a reinforcement at least partly embedded in the resin part and made of a material having a higher modulus of elasticity than the resin part,

wherein the back of the fitting part of each of the blocks in the direction of insertion of the tension member is formed with an innermost abutment surface against which an abutment part of the tension member located at a leading end thereof in the direction of insertion of the tension member abuts, and

wherein the fitting part is formed with an indent by downwardly recessing a portion of the resin part located between the lower inserting/receiving part and the innermost abutment surface.

11. The heavy duty power transmission V-belt of Claim 10, wherein the indent and the lower end of the innermost abutment surface are connected together by a curved surface to merge smoothly into each other.

12. The heavy duty power transmission V-belt of Claim 10, wherein the indent has substantially an arcuate shape.

13. The heavy duty power transmission V-belt of Claim 10, wherein edges between the indent and both the front and rear surfaces of each of the blocks in the lengthwise direction of the belt are chamfered in an arcuate cross-section.

14. The heavy duty power transmission V-belt of Claim 10, wherein the lowermost end of the indent is located at the same level with or below the lower end of the lower inserting/receiving part of the fitting part.

15. The heavy duty power transmission V-belt of Claim 10, wherein the edge between the lower receiving/inserting part and the abutment part of the tension member is located in the indent.

16. A heavy duty power transmission V-belt comprising:

at least one endless tension member a top surface of which on the back face side of the belt is provided with a plurality of upper receiving/inserting parts aligned lengthwise of the belt and a bottom surface of which on the bottom face side of the belt is provided with a plurality of lower receiving/inserting parts aligned lengthwise of the belt in correspondence with the plurality of upper receiving/inserting parts; and

a plurality of blocks each of which has at least one fitting part into which one said tension member is fitted by press insertion and contact parts respectively provided in side surfaces thereof in the widthwise direction of the belt and contactable with side faces of a pulley groove, said at least one fitting part being formed at the upper face with an upper inserting/receiving part mating with the upper receiving/inserting part of the tension member and being formed at the lower face with an lower inserting/receiving part mating with the lower receiving/inserting part of the tension member,

wherein through the fitting of the tension member into the fitting part of each of the blocks, the plurality of blocks are securely engaged to the tension member so that both the contact part of the side surface of each of the blocks in the widthwise direction of the belt and the side surface of the tension member are brought into contact with the side face of the pulley groove, whereby mating engagement between the inserting/receiving parts of the blocks and the receiving/inserting parts of the tension member allow power transmission,

wherein each of the blocks is formed of a resin part constituting at least the contact part and the fitting part, and a reinforcement at least partly embedded in the resin part and made of a material having a higher modulus of elasticity than the resin part,

wherein the back of the fitting part of each of the blocks in the direction of insertion of the tension member is formed with an innermost abutment surface against which an abutment part of the tension member located at a leading end thereof in the direction of insertion of the tension member abuts,

wherein the fitting part is formed with an indent by downwardly recessing a portion of the resin part located between the lower inserting/receiving part and the innermost abutment surface, and

wherein the relationship $\theta 2-3<\theta 1<\theta 2+3$ is established between an innermost abutment surface angle $\theta 1$ made by a portion of the innermost abutment surface located between corresponding positions thereof to the lower end of the upper inserting/receiving part of the fitting part and the upper end of the lower inserting/receiving part of the fitting part and a vertical plane along the length of the belt and a belt side face angle $\theta 2$ made by the contact parts of the right and left side surfaces of each of the blocks and the vertical plane.